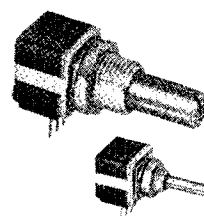
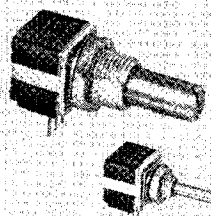
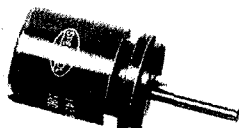
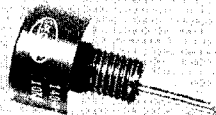


# SINGLE-TURN POTENTIOMETERS

**1/2" ROUND  
WIREWOUND**

**1/2" SQUARE  
PCB PINS  
CONDUCTIVE PLASTIC  
AND CERMET**



MODEL	140 *	142	148 *	149 *
Description	1/2" Round 1/8" Shaft	1/2" Round 1/8" Shaft	1/2" Square, PCB Pins 1/8" or 1/4" Shaft	1/2" Square, PCB Pins 1/8" or 1/4" Shaft
Mounting	Bushing	Servo	Bushing	Bushing
Element Technology	Wirewound	Wirewound	Conductive Plastic	Cermet
Specifications, Ordering Information	Page 24	Page 24	Page 25	Page 25

## ELECTRICAL

Resistance:				
Standard Range, Ohms	50Ω to 20KΩ	50Ω to 20KΩ	500Ω to 1MΩ	100Ω to 2MΩ
Capability Range, Ohms				
Tolerance:				
Standard, %	±5%	±5%	±20%	±10%
Special to, %				
Linearity:				
Standard, %	±1%	±1%	±5%	±5%
Special to, %				
TC, PPM / °C	±20	±20	±500	±150
Power Rating: *				
Watts at °C	2.0 W at 40°C	2.0 W at 40°C	0.5 W at 70°C	1.0 W at 85°C
Derate to 0 W at °C	125°C	125°C	125°C	150°C
Electrical Travel:				
Continuous		350° +0° -4°		
Stops	320° ±5°		265° ±5°	265° ±5°
End Voltage / End Resistance	Lin x E, 50Ω ≤ Rt ≤ 70KΩ	Lin x E, 50Ω ≤ Rt ≤ 70KΩ	2Ω Max	2Ω Max
Taps (Special Order)	Center (10KΩ Max Rt)	Center (10KΩ Max Rt)		
Phasing, To Section 1				

## PHYSICAL

Temperature	-55°C to +125°C	-55°C to +125°C	-20°C to +125°C	-20°C to +150°C
Rotational Life: Shaft Revolutions	500,000	500,000	100,000	50,000
Stop Strength	5.0 in-lbs (5.76 kgm-cm)		48 oz-in	48 oz-in
Weight: First Sec / Each Add Sec	0.1 oz	0.3 oz	0.20 oz / 0.06 oz	0.20 oz / 0.06 oz
Mechanical Angle	330° ±5°	360° (Continuous)	295° ±5°	295° ±5°
Moment Of Inertia, Each Section				
Ganging:				
Sections Maximum Terminal Alignment	1	1	4	4

## OPTIONS

Shaft Length & End  
Shaft Lock  
Continuous Rotation  
High Torque

Non-Turn Lug, Shaft Lock  
J-Hooks, Shaft Length  
Non-Linear Tapers  
Stand-Offs/Support Plates  
SPDT Switch  
Dual Concentric Shafts

Non-Turn Lug, Shaft Lock  
J-Hooks, Shaft Length  
Non-Linear Tapers  
Stand-Offs/Support Plates  
SPDT Switch  
Dual Concentric Shafts

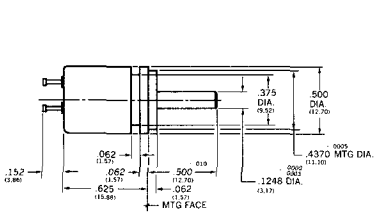
## NOTES

\*Additional sections derated to 75% of section 1

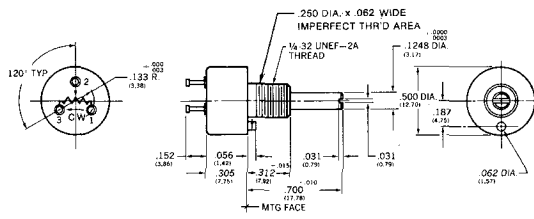
\* Standard Distributor Product



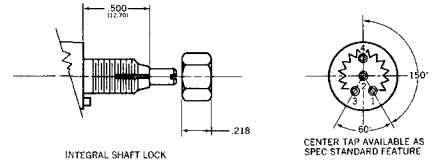
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**SERVO MOUNT**



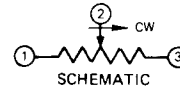
**BUSHING MOUNT**



**INTEGRAL SHAFT LOCK**

**CENTER TAP AVAILABLE AS SPEC STANDARD FEATURE**

TOLERANCES: UNLESS OTHERWISE NOTED, DECIMALS ± .005, ANGLES ± 2°  
BASIC DIMENSIONS ARE IN INCHES, MILLIMETER DIMENSIONS IN PARENTHESES.



**SCHEMATIC**

**HOW TO ORDER THE MODEL 140 OR 142**

Models can be ordered from this specification sheet by stating:

**140 - 0 - 0 - XXX**

Model Number  
 140 - Bushing  
 142 - Servo

Mechanical Options  
 Bushing  
 0 - Stops, Slotted Shaft (std.)  
 1 - Plain Shaft  
 2 - Shaft Lock  
 3 - Continuous Rotation  
 4 - Combination 1 & 2  
 5 - Combination 1 & 3  
 6 - Combination 2 & 3  
 7 - Combination 1, 2 & 3  
 Servo  
 0 - Continuous Rotation, Plain Shaft (std.)

Other Optional Features  
 Bushing  
 0 - Standard Torque  
 1 - Center Tap (10K max. Rt)  
 2 - High Torque  
 3 - Sealed Construction  
 4 - Combination 1 & 2  
 5 - Combination 1 & 3  
 6 - Combination 2 & 3  
 7 - Combination 1, 2 & 3  
 Servo  
 0 - Standard Torque  
 1 - Center Tap (10K max. Rt)

Resistance EIA Code

		<b>140, 142</b>	
<b>Materials</b>			
Housing		Aluminum, Anodized	
Bushing/Servo		Integral with Housing	
Lids: Rear		Thermoset Plastic	
Front		—	
Shaft		Stainless Steel	
Terminals		Brass, Gold Plated	
Bushing Mount Hardware:			
Lockwasher, Internal Tooth		Steel, Nickel Plated	
Panel Nut		Brass, Nickel Plated	
<b>Electrical Specifications</b>			
Dielectric Withstanding		1,000v RMS, 60Hz	
Insulation Resistance		1,000M $\Omega$ , 500v dc	
Peak Noise		100 $\Omega$ ENR	
<b>Environmental Specifications</b>			
Moisture Resistant		Yes	
Vibration		20g, 10 to 2,000Hz	
Shock		50g	
Salt Spray		96 Hours	
Load Life		900 Hours	
Sealing		Available (M140 Only)	
<b>Mechanical Specifications</b>			
Bearing Type:			
Servo Mount			Ball
Bushing Mount			Sleeve
Operating Torque: oz-in		<b>Starting</b>	<b>Running</b>
Servo: 1 Section		0.075	0.05
Bushing: 1 Section		0.20	0.20
Each Add Section			
Mechanical Tolerance: in. Max		<b>Bushing</b>	<b>Servo</b>
Shaft Runout (TIR/in)		0.002	0.002
Pilot dia. Runout (TIR)		0.002	0.002
Lateral Runout (TIR)		0.003	0.002
Shaft End Play		0.006	0.004
Shaft Radial Play		0.003	0.002

EIA Code	Standard Resistance	140	142
		Resolution %	Resolution %
500	50 $\Omega$	0.542	0.542
101	100 $\Omega$	0.431	0.431
201	200 $\Omega$	0.361	0.361
501	500 $\Omega$	0.312	0.312
102	1K $\Omega$	0.255	0.255
202	2K $\Omega$	0.197	0.197
502	5K $\Omega$	0.170	0.170
103	10K $\Omega$	0.147	0.147
203	20K $\Omega$	0.105	0.105



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